

ABSTRACT OF THE DISCLOSURE

A method of removing organic particles from a registration mark on a semiconductor wafer. The method comprises providing a semiconductor wafer comprising at least one registration mark at least partially filled with organic particles. The at least one registration mark has a trench width from approximately 1.0 μm to approximately 3.0 μm . The semiconductor wafer is exposed to a cleaning solution comprising tetramethylammonium hydroxide and at least one surfactant, such as an acetylenic diol surfactant. The semiconductor wafer is exposed to an ultrasonic or megasonic vibrational energy. A semiconductor wafer previously subjected to a chemical mechanical planarization treatment and having a reduced amount of organic particles in a registration mark is also disclosed.

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